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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/874,340 | 06/05/2001 | Patrice Hirtzlin | PF000054 | 7857 |

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EXAMINER

WIMER, MICHAEL C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2821

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,340

Applicant(s)

HIRTZLIN ET AL.

Examiner

Michael C. Wimer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/19/2003 (amendment "A").
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7,9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchs et al (6329954).

Regarding Claims 1-7,9 and 12 Fuchs et al show a source antenna for TX/RX of EM waves comprising an array 300 or 400 in Figs. 28,29 and 32,33, of "n" radiating elements 310 or 410 of a quadrifilar helix and of a traveling wave type, phased in rotation and operating in a first frequency band, and an element 320 or 420 with longitudinal radiation operating in a second band, where both antennas have a common phase center and disposed along a common axis, and the array positioned around the element, all arranged as claimed. It would have been obvious to a skilled artisan that the monopole 320 or dipole 420 emits "longitudinal radiation", and that the quadrifilar helix defines a plurality of helices each being a "helical device", as claimed. Regarding Claim 5, the substrate 132 in Fig. 5 is used in all embodiments of the antennas by Fuchs et al. The substrate contains a printed feed array with all necessary electronic devices. Regarding Claim 7, doubling the amount of helices from 4 to 8 is an obvious

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design choice solely dependent on antenna gain desired and found obvious to the skilled artisan.

3. Claims 8,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchs et al as applied to claims 1 and 7 above, and further in view of Spencer (5757323) and Chen (6396440).

Regarding Claims 8,10 and 11, it would have been obvious to the skilled artisan to employ the longitudinal antennas in of Spencer, i.e., dielectric rod 3 fed with a cavity waveguide 26 in Fig 1(d), in lieu of the monopole/dipole of Fuchs et al. Chen et al show similar feeding arrangements that may be used to feed helical antennas (column 6, first paragraph). The waveguide coupling 26,33,34 in turn feeds the p.c. network 12,22-24. It would have been obvious to employ such feed arrangements in the primary reference devices.

Response to Arguments

4. Applicant's arguments filed 2/19/2003 have been fully considered but they are not persuasive. Specifically, Fuchs et al show an antenna that operates on multiple frequencies is a band. A skilled artisan finds it obvious to operate an designed antenna for any frequency of operation in a band. The term longitudinal-radiation does not necessarily imply that the radiation is along any axis, without a definite recitation of the axis of radiation or the extent of the antenna. All claimed structure is shown to be obvious to the skilled artisan and thus the claims at hand are not seen to patentably define over the prior art of record.

Conclusion

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5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (703) 305-3555. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (703) 308-4856. The fax phone number 703.746.9146 may also be used.



Michael C. Wimer
Primary Examiner
Art Unit 2821

MCW
29 April 2003